

Office of Science

***Independent
Review
Handbook***

January 2001

***Prepared by the
Construction Management Support Division
Office of Science
Department of Energy***

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1. INTRODUCTION

1.1 Purpose of the Handbook

This Independent Review Handbook was developed by the Construction Management Support Division (CMSD) within the Office of Laboratory Operations and Environment, Safety and Health of the Office of Science (SC). The purpose of this handbook is to provide guidance to individuals and committees that will be conducting independent reviews of SC facilities. This handbook is also intended to aid Program Offices, Operations and Site Offices, and site contractors in the preparations for or participation in independent reviews. This handbook will be modified periodically as guidance and the process for independent reviews evolves.

1.2 Background

The Office of Laboratory Operations and Environment, Safety & Health (SC-80) provides leadership and a central corporate focal point for the operations; infrastructure; environment, safety and health; and construction management activities of the Office of Science.

The Office of Laboratory Operations and Environment, Safety & Health is comprised of three divisions:

- Construction Management Support Division (SC-81)
- Laboratory Infrastructure Division (SC-82)
- Environment Safety & Health Division (SC-83)

The CMSD serves as the focal point for independent project reviews of SC projects. One of the primary functions of the CMSD (Appendix A) is to conduct independent technical, cost, schedule, and management peer reviews of SC construction projects and experimental equipment. Most reviews are conducted semiannually for ongoing projects and experimental equipment. Also, CMSD reviews projects prior to requesting construction funds in the budget process to establish technical, cost and schedule baselines, and prior to requesting authorization to start operations. This handbook describes the review process.

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2. THE INDEPENDENT REVIEW

2.1 Philosophy

The overall purpose of independent reviews is to determine, by a non-proponent body, whether the scope of programs, projects, or activities, the underlying assumptions regarding technology and management, the cost and schedule baselines, and contingency provisions are valid and credible within the budgetary and administrative constraints under which DOE must function.

Reviews conducted by the CMSD are intended to reduce the risk of project failure by identifying existing and potential problems in a timely manner so that adequate resolution is possible. These reviews will assist the field in successfully completing the project, as well as identify areas where SC management needs to focus additional resources to be successful.

CMSD reviews are intended to meet the Independent Review requirements of DOE Order 413.3. This Order states that DOE recognizes that independent reviews are valuable in assessing the status of its projects.

2.2 Objectives

The purpose of the Independent Review is to:

- Determine if the relationship to the mission of the sponsoring program element is appropriate
- Assess whether project can be delivered within the cost and schedule baselines established by DOE or whether alternative solutions may be preferable
- Determine whether the proposed project and its acquisition strategy represents a technically valid, cost-effective, realistic means of accomplishing its stated objectives

The Independent Review process includes the following:

- An evaluation of all relevant technical, economic, and management factors used to justify the project
- An evaluation of all relevant factors used to develop its scope
- A review of the validity of proposed costs, scopes, and schedules
- Constructive recommendations for alternatives or improvements if the approach is found to be unreasonable, not justified, or not integrated into the overall program activities

Specifically, the independent review addresses:

- Project conformance to mission needs
- Technical work scope documentation
- Cost estimates: level of detail, basis, risks, contingency planning, funding/obligations/cost plans, integration with schedules, overhead rates, material and labor quantities and rates/quotes, life cycle costs
- Schedules: level of detail, activity and logic assumptions, risks, contingency planning, integration with cost estimates, activity logic alignment with technical-scope planning, resource planning
- Recommendations and action items from previous reviews
- Procurement Strategy
- Business Management: Management organization, staffing, work assignment process, project management control systems, risk management, baseline and technical work management, quality management, and ES&H/NEPA compliance.

The independent review of a project is to be of sufficient detail, using a graded approach, to permit an objective independent reviewer to reach a supportable conclusion about the project's justification in light of the current mission of the DOE program sponsor.

The results of each review are made available to SC management, program management and the applicable field offices, in support of SC programs. The CMSD tracks action items from the review to closure and follows up on all recommendations made at the review, usually by the subsequent review.

3. GUIDELINES FOR CONDUCTING REVIEWS

3.1 Planning

3.1.1 The Review Plan

During the review planning phase project background information is assembled for the review committee. Key project points of contact at DOE headquarters and the field are identified. The proposed scope of the review is mapped out in coordination with SC Management, SC program managers and field project managers. After determining the scope of the review, it is possible to identify the subject matter expertise that should be present on the review committee. The CMSD identifies and arranges for appropriate personnel to staff each review committee, in consultation with the requesting organization. The end result of the planning process is a review plan that forms the basis for each review. While the structure of each review plan is the same, the content is specifically tailored for each project. The review plan helps the review committee coordinate activities as it executes each review

Outline

The outline for a typical review plan is shown in Table 3-1, Review Plan Outline. *Purpose* defines the primary reason for the review. *Background* defines the relationship of the project to the sponsoring DOE program element. *Objectives* defines the scope of each review and should address technical, cost, and schedule baselines, including management factors and acquisition approach used to justify the project and develop its scope. *Deliverables* lists the documentation that will be prepared and made available prior to or at the review. *Problem/Issues* identifies key obstacles the project faces. *Resources* defines the size and configuration of the review

committee. *Budget* identifies any budget issues for funding the review. *Schedule* defines the primary activities in the review with completion dates for these activities. The typical activities in a review schedule and associated timing are shown in Table 3-2. The review schedule indicates specifically the persons that are responsible for executing each action. The standard deliverables of a review, in addition to the Review Plan, include Draft Review Report, Final Report, and a Post Review Action Plan. The Post Review Action Plan serves as a tracking document to follow each action item to closure. This document is essential to assure the benefits of the review are realized.

**Table 3-1.
Review Plan Outline**

1.0	Purpose
2.0	Background
3.0	Objectives
4.0	Deliverables
5.0	Problems/Issues
6.0	Resources
7.0	Budget
8.0	Schedule
	Appendices

Table 3-2. Review Schedule

<u>Activity</u>	<u>Typical Time Frame (Relative to Begin Review)</u>
Review Plan	-8 weeks
Charge Memo	-8 weeks
Review Committee (size and configuration)	-8 to -6 weeks
Logistics Planning	-8 to -6 weeks
Outline for Final Report	-8 to -6 weeks
Agenda	-8 wks draft/-6 wks final
Consultant Funding (as required)	-4 weeks
Advance Review Material Prepared	-3 weeks (at least)
Advance Review Material Distribution	-2 weeks
Conference Call with Committee (if necessary)	-1 week
Begin Review	0
Complete Review/Closeout Presentation to Project Management	+3 to +5 days
Summary to Office of Science Management	+2 business days after review
Associate Director Meeting with Office of Science Management	+5 business days after review
Draft Report	+1 to +2 weeks
Review and Comment by Committee	+2 to +3 weeks
Finalize Report	+8 weeks
Track Action Plan	Action Items until closure, Recommendations to next review

Committee Member Selection

Each review committee is configured to satisfy the unique purpose of the review. It is critical that the individuals selected to perform the independent reviews be credible and possess indisputable integrity and independence. The standard used by SC is that the reviewers have no current affiliation with the project being reviewed and are as independent as possible. In addition, the reviewers are not drawn from the responsible program office within the PSO, related contractors from the project office, or a related funding office.

The review chairperson for SC sponsored reviews is always a DOE Federal employee, usually from the CMSD. SC review committees can range from two to more than sixty experts. It has been the experience of SC that the committee is primarily drawn from experts from national laboratories, universities, and private industry and federal employees from other sites or offices. The range of disciplines involved may include project relevant technical disciplines, project management, contract systems, cost engineering, and Environment, Safety and Health.

Review committees also include members of the CMSD staff who are trained to support review activities. They are designated to follow the progress of a project throughout its life and are knowledgeable of project specific issues. These members have experience in the policies and procedures for conducting reviews and serve as a resource for maintaining the effectiveness and efficiency of review committee performance.

3.1.2 Coordination

A significant amount of coordination is necessary in preparation for a successful review. A variety of documents need to be prepared and/or exchanged prior to the review as delineated by the review plan. Advance attention to consistency of automated information processes is critical. Resources necessary at the time of the review must be arranged in advance.

Documentation

Review Documentation is prepared in consultation with the appropriate program and project representatives. A brief summary of these documents is shown below.

Charge to the Committee. This document is the basis of the entire review process. The charge must identify, clearly and concisely, what is expected of the review committee. It includes a discussion of the background for the review, what the scope of the review includes, what actions are affected by the outcome of the review and what is the schedule of events surrounding the review, including completion of a review report. See Appendix B for example.

Committee Membership. Prospective committee members are contacted and their participation is confirmed. Then a listing of the participants in the review is prepared. It includes both the review committee members and review observers. Proponents (those being reviewed) are not included, as this information is usually documented in the review agenda. The listing includes the individual's affiliation, mailing address, phone and fax numbers and e-mail address. See Appendix C for example.

Invitation Letter/Memorandum. Each review committee participant receives a letter from the review chairperson. The letter formalizes their participation and provides them with details about the review. See Appendix D for example.

Agenda. The specifics of the review from start to finish are provided in the agenda. Each review subject is identified with the allotted time, name of presenter(s) and reference information (e.g., Work Breakdown Structure number). Building and room numbers are included. Time is allotted for Executive Sessions, report writing and a closeout. See Appendix E for example.

Advance Information. Detailed information about the project to be reviewed is provided to the committee prior to the review. This varies from project to project but generally includes scope documents, management documents, relevant regulatory information, cost estimates and schedules, funding profiles, contingency analysis, and responses to prior recommendations. DOE or program reference documents are also made available where relevant.

Travel Arrangements. Usually included within the invitation letter, the committee members need to be provided with information, about specific arrangements, such as lodging, that have been made for them or suggestions for their own arrangements. Area and review site maps are included as appropriate.

Report Outline. This is essentially the table of contents for the review report. Each section is titled and numbered and Appendices are numbered so that references to them will be consistent. In addition, each section is assigned to a committee or subcommittee member for the coordination of writing the report. See Appendix F for example.

Report Format. A “strawperson” of the structure to be used when writing the report is provided to ensure report consistency. See Appendix G for example.

Software/ Hardware

The preferred software for the review report is Microsoft Word on a PC based system. Where other arrangements are made, it is assured in advance that necessary translations can be made to the desired report format. The report should be in 12 point Times New Roman font.

Resources

Meeting rooms of adequate size and appropriately equipped are arranged in advance of the review. Separate “break-out” rooms are available for additional presentations and discussions. Access to outside phone lines and the Internet are available to the review committee. The primary review facility is equipped with an overhead projector, blank view graph medium and markers. Access to reproduction facilities is necessary. Dedicated word-processing support for report writing is arranged as necessary.

3.2 On-Site

3.2.1 Technical Procedures

Chairperson Roles and Responsibilities

The chairperson of the review committee is responsible for the success of the independent review. He or she is designated as early as possible in the preparation for the review to allow sufficient time for familiarization with the specific project under review and for organizing the review. He/she is responsible for the selection of the review committee and organizing the review. At the review, the chairperson's primary responsibilities include:

- Ensuring that the review committee remains focused on the assigned charge
- Maintaining order in the review, managing to the agenda
- Establishing and maintaining interfaces with project staff
- Coordinating the preparation of the draft review report
- Organizing and conducting parallel sessions
- Organizing the close-out briefing

Protocols/Tone/Conduct

The review is conducted as outlined by the agreed upon agenda. Typically, this is in the form of formal presentations by appropriate individuals to the committee using support materials such as viewgraphs, charts, drawings or photos. Presentations are to be concise and allow for questions and answers within the allotted time. Viewgraphs are to be structured to be consistent from presenter to presenter to be easily read and concise. Detail information should be transmitted via supplemental handout documents. The review committee is the primary audience for the presentations, but other individuals may attend, particularly if their presence may be advantageous to any line of questioning from the review committee. When the agenda calls for discussion time, or at the conclusion of a particular topic presentation, a more informal round-table format is appropriate.

The Chairperson maintains an appropriate professional code of conduct. This applies to all that are present at the review. In general, the review is rigorous. The tone is success-oriented; questions and challenges of the information presented are made with the goal of improvement. Conversations are non-confrontational.

Lines of Inquiry

The primary guidance document for determining lines of inquiry is the Charge to the Review Committee. However, there are numerous other sources of information that may need to be considered in the execution of the review. For example:

- Established technical, cost and schedule procedures
- Management plans and organizational structures
- Integration procedures
- Regulatory drivers
- DOE Orders and guidance documents

These documents may be specific to SC or may apply DOE wide.

In-Brief/Out-Brief

Typically, the first agenda item is an “In-Brief” or “Executive Session.” This is an opportunity to conduct formal introductions and review the charge, procedures, and logistics. Attendance is usually limited to the review committee and DOE observers (e.g., program representatives).

At the close of the review, an “Out-Brief” or “Closeout” is conducted. At this time the review committee presents the results of the review. Findings, comments, and recommendations are presented and action items are agreed upon. Presentations are made by the committee individual assigned to each topic under review, following the draft report outline. Depending on the circumstances, the attendance at this session may or may not be limited. A separate briefing with site management may also be arranged as appropriate. Copies of materials presented at the Closeout are usually provided.

3.2.2 Administrative Procedures

Report Preparation

The report is divided into sections that are assigned to individuals of the review committee for writing. Writing may commence prior to the review, based on information provided in advance. Time will be allowed in the review agenda for writing prior to the Closeout. The intention is to

complete a draft report before the review committee leaves the site. The draft report is reviewed by a designated editor to provide consistency without changing content. The draft report is then provided to the committee for a final review. It is also provided to the DOE site representative for a factual accuracy check. Comments are resolved and incorporated by the editor and a final report is generated. The final report is transmitted to the appropriate authorities and the review committee.

Committee members are encouraged to bring portable computers and do word processing, but support is made available at the site.

3.3 Post Review

3.3.1 Follow Up

Following the review, comments and recommendations are reviewed with headquarters management. This includes a written summary to SC management that identifies status, issues, major recommendations and action items. In addition, the responsible SC program Associate Director conducts a conference call with SC management. This call includes appropriate SC program personnel, the review chairperson, the Operations Office Manager, the Site Office Manager and the DOE Project Manager. This meeting briefly reviews the status, issues, recommendations and action items from the review and discuss any related management concerns or additional actions that SC management may have.

The comments and recommendations of the review committee are not necessarily agreed upon by either field or headquarters management. However, written responses within a given time frame are requested for each recommendation. The findings of review committees are not compromised or influenced by headquarters or field management bias. Headquarters project personnel and CMSD staff tracks each recommendation and action item to closure.

3.3.2 Records

Documentation Disposition

Unless subject to a sensitive situation, the documentation presented at the review is made available to the committee members to retain as necessary. Presentation materials are provided to the committee. The DOE site representative retains detailed information. It is recommended that

all information be retained, by individual committee members, for future reference. This reference may be needed for finalizing the review report and/or for comparison to future reviews. The CMSD staff retains this information through the life of the project.

Resumes and relevant information about committee members are collected and tabulated by the CMSD staff and are used to assist in developing committees for future reviews.

APPENDIX A

CONSTRUCTION

MANAGEMENT SUPPORT

DIVISION MISSION

Construction Management Support Division Mission

Provides independent advice to the Director of the Office of Science relating to those activities essential to constructing and operating major research facilities. These facilities include large particle accelerators, fusion systems, research laboratories, and research devices, etc. In addition, provides professional management and staff support regarding these functions to SC program offices. Prepares analytical documents as required by top management of the DOE or other Government officials on the status of facilities.

Directs and supervises the development, initiation, and implementation of policies, plans and procedures for design, fabrication, construction, commissioning, operation and decommissioning of research/conventional facilities and devices required to support SC programs. These facilities are located throughout the United States at universities, national laboratories, industrial centers and foreign countries. Ensures the establishment of appropriate management arrangements for executing these activities both within DOE and at all off-site locations. Directs the planning, review, evaluation and execution of SC facility construction activities.

Represents the Director of the Office of Science in meetings with DOE, Office of Management and Budget (OMB), Congress, and other oversight or investigatory bodies on all matters involving the planning, design, construction and operation of research facilities. Coordinates and acts as liaison for SC program office activities with other DOE and non-DOE offices on these matters.

Acts as the SC Secretariat for the Energy Systems Acquisition Advisory Board (ESAAB) and the project Baseline Change Control (BCC) process. In this capacity, establishes and implements procedures for the conduct of the ESAAB preparation and BCC process. Facilitates program office compliance by providing hands-on assistance in the preparation of documents, maintaining schedules and coordinating with all other DOE offices engaged in the process.

Conducts independent technical, cost, schedule and management peer reviews of SC construction projects and large experimental equipment. Most reviews are conducted semiannually for ongoing projects and large experimental equipment. Also, reviews large projects prior to requesting construction funds in the budget process to establish technical, cost and schedule baselines, and prior to requesting authorization to start operations.

Coordinates and conducts validation reviews for SC projects for inclusion in the fiscal budget process. Provides guidance and participates in the preparation, justification, and support of program offices' construction budgets within the Department and through the Executive and Congressional budget cycles.

Provides management and staff support regarding construction management activities to the SC program offices; collaborates closely with these SC organizations and provides oversight services on construction management issues.

APPENDIX B

CHARGE TO THE COMMITTEE

Department of Energy
Review of the Fermilab Main Injector Project
June 3-5, 1998

CHARGE to the COMMITTEE

This is the fifteenth in a series of Department of Energy (DOE) reviews of the Fermilab Main Injector (FMI) project that have been held approximately semiannually. The project will supply a 2-mile ring enclosure containing two new accelerators: a rapid-cycling 150 GeV synchrotron called the Main Injector, and an 8 GeV antiproton storage and cooling ring called the Recycler. The Main Injector will replace the Main Ring as the injector to the Tevatron. Scheduled for completion in March 1999, the project is designed to support an order-of-magnitude increase in luminosity for Tevatron collider operations. Included in the project scope are commissioning the Main Injector and completing construction of the Recycler.

The DOE committee that reviewed the project in November 1997 found good progress had been made. The contingency remaining at that time was deemed adequate if all went well. The project schedule presented at the review was appropriately detailed and credible.

The present review will focus on the plans for completing the FMI project. You are being asked to review all technical areas of the project as well as its cost, schedule, and management aspects. Please address the following questions in your assessment.

1. Comment on Fermilab's plans for commissioning both the Main Injector and the Recycler, including definition of objectives, modeling studies, adequacy of diagnostics, and "what-if" scenarios.
2. For each technical area at WBS Level 3:
 - a. Please indicate what remains to be done to complete the project.
 - b. What is your estimate of the cost to do this work?
 - c. Does the schedule for this work appear realistic?
3. Is the remaining contingency adequate to complete the project? If there is any doubt, please identify and evaluate alternatives.
4. The performance goals for commissioning the Main Injector are given in the FMI Project Plan, Table 1.1. What is your level of confidence that these goals will be demonstrated by March 1999?
5. What is your level of confidence that construction of the Recycler will be complete by March 1999?

Please provide a report of the review to the Director, Division of High Energy Physics, Department of Energy by August 7, 1998.

APPENDIX C

REVIEW

COMMITTEE

**Department of Energy
Review of the Fermilab Main Injector Project
June 3-5, 1998**

REVIEW COMMITTEE

DOE

Stephen Tkaczyk, SC-81, Chairman

Technical Consultants

Rodney Gerig, ANL
Andrew Hutton, TJNAF
William MacKay, BNL
Kem Robinson, LBNL
William Sproule, ANL

Observers

Philip Debenham, SC-224 (DOE Program Manager)
Ronald Lutha, CH/BAO (DOE Project Manager)
Bruce Strauss, SC-224

APPENDIX D

INVITATION LETTER

Dear Review Committee Member:

I would like to thank you for agreeing to serve as a member of the Department of Energy (DOE) committee reviewing the Fermilab Main Injector project. The review will take place at Fermilab, June 3-5, 1998, beginning at 8:00 a.m. in the Comitium in Wilson Hall.

At my request, the review is being chaired by Stephen Tkaczyk of the DOE Office of Energy Research Construction Management Support Division. A copy of the tentative agenda, a list of review participants and their addresses and phone numbers are enclosed. The purpose of the review is to examine the technical, cost, schedule, and management aspects of the project. A copy of the charge to the review committee is enclosed. Specific questions to be addressed by the committee are contained in the charge, and these should serve as the basis of your analysis.

To assist you in preparing for the review, a copy of the report from the last (November 1997) review is enclosed. I have requested Fermilab to send copies of relevant background information directly to you. Also, copies of all presentation material will be provided to you at the beginning of the review. Time has been provided during the review for writing the first draft of the committee report, for which preliminary writing assignments are enclosed.

A block of rooms has been set aside for the nights of June 2-4, 1998, at the Lisle Hilton Hotel, 3003 Corporate West Drive, Lisle, Illinois, at the Fermilab rate of \$109.00 per night plus tax. To reserve a room please contact the hotel directly at 630-555-0000, and identify yourself as a member of the DOE review committee. Messages can reach you during the review through Ms. Mary Cullen at 630-555-1234, and fax messages can be sent to you through her at fax number 630-555-9999.

Again, I want to express my appreciation for your willingness to serve on this committee. If there are any questions, please contact me.

Sincerely,

Stephen Tkaczyk
Chairperson
DOE Review Committee

Enclosures

APPENDIX E

REVIEW AGENDA

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**Department of Energy
Review of the Fermilab Main Injector Project
June 3-5, 1998**

AGENDA

Wednesday, June 3, 1998

8:00 am DOE Executive Session Review Committee

Overview of Project

9:00 am Welcome and Opening Remarks J. Peoples
9:15 am Project Overview. Technical/Cost/Schedule/Management S. Holmes
10:15 am Break
10:30 am Installation Status & Schedule to Complete P. Martin
11:15 am Commissioning Plan S. Mishra/J. Jackson
12:15 pm Working Lunch
1:15 pm Tour of Construction Site and Enclosure

WBS 1.1 Technical Components

2:15 pm WBS 1.1.1 Magnet Systems D. Harding
2:45 pm WBS 1.1.2 Vacuum Systems T. Anderson
3:15 pm WBS 1.1.3 Magnet Power Supplies G. Krafczyk
3:45 pm Break
4:00 pm WBS 1.1.4 RF Systems J. Reid
4:30 pm WBS 1.1.6 Kickers and Slow Extraction G. Krafczyk
5:00 pm DOE Executive Session Review Committee
6:30 pm Adjourn

Thursday, June 4, 1998

WBS 1.1 Technical Components (cont.)

8:30 am WBS 1.1.7 Stochastic Cooling R. Pasquinelli
9:00 am WBS 1.1.8 Instrumentation J. Crisp
9:15 am WBS 1.1.9 Controls A. Mason
9:30 am WBS 1.1.10 Safety Systems J. Anderson
9:45 am Break
10:00 am WBS 1.1.12 Utilities/Abort & WBS 1.3.5 LCW Repair B. Hoffman
10:45 am WBS 1.1.13 Installation L. Sauer

WBS 1.2 Civil Construction

11:15 pm Civil Construction Status T. Pawlak
12:00 pm Working Lunch

WBS 1.3 Project Management

1:00 pm	Summary of Accelerator Readiness Review Activities	A.L. Read
1:30 pm	ES&H Activities	W. Fowler
1:45 pm	Summary	S. Holmes
1:55 pm	Additional Explanation of Installation Schedule	P. Martin
2:20 pm	Recycler Commissioning Schedule	J. Marriner
2:35 pm	Supplemental Presentation on Power Supplies and Kickers.....	G. Krafczyk
2:55 pm	KRS Reconfiguration.....	D. Wolff
3:10 pm	Recycler Completion Milestone, Clarification of MI Commissioning Goals, and Other Project Costs	S. Holmes
3:55 pm	Break	
4:15 pm	DOE Executive Session/Additional Presentations on Request..	Review Committee
7:00 pm	Adjourn	

Friday, June 5, 1998

8:30 am	DOE Executive Session and Writing	Review Committee
12:00 pm	Working Lunch	
1:00 pm	DOE Executive Session and Writing.....	Review Committee
2:00 pm	Closeout with FMI Management	Review Committee
3:00 pm	Adjourn	

APPENDIX F

REPORT OUTLINE

**Department of Energy
Review of the Fermilab Main Injector Project
June 3-5, 1998**

REPORT OUTLINE/PRELIMINARY WRITING ASSIGNMENTS

[First individual listed is lead author.]

Executive Summary	Tkaczyk
1. Introduction.....	Hutton
2. Accelerator Physics and Commissioning.....	MacKay, Hutton
3. Magnet Systems (WBS 1.1.1).....	Robinson, Strauss
4. Vacuum Systems (WBS 1.1.2)	Robinson
5. Magnet Power Supplies (WBS 1.1.3).....	Strauss
6. Radio Frequency Systems (WBS 1.1.4)	MacKay
7. Kickers and Slow Extraction (WBS 1.1.6)	MacKay
8. Stochastic Cooling	Gerig
9. Instrumentation (WBS 1.1.8).....	Hutton
10. Controls (WBS 1.1.9)	Robinson
11. Safety Systems (WBS 1.1.10).....	Sproule
12. Mechanical Utilities & Abort (WBS 1.1.12)	Sproule
13. Installation (WBS 1.1.13)	Gerig
14. Civil Construction (WBS 1.2).....	Sproule
15. Cost	Gerig
16. Schedule	Hutton, Gerig
17. Management.....	Hutton
19. Environment, Safety & Health.....	Sproule

Appendices

- A. Charge Memorandum
- B. Review Committee Membership
- C. Review Agenda
- A. Cost Tables
- B. Schedule Charts
- C. Funding Tables
- D. Action Items

APPENDIX G

REPORT FORMAT

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Report Format

FINDINGS

Summary of presentation material, documentation and interviews that the reviewer finds is relevant to supporting the review assessment and recommendations. Narrative, focusing on areas of the review and the project that are positive as well as those areas the reviewer finds lacking. Do not number your findings.

COMMENTS

Assessment of material provided during the review, the reviewer's reaction to that information and the conclusions based on the findings. This narrative carries more emphasis than the Findings, and may lead to one or more Recommendations. Do not number your comments.

RECOMMENDATIONS

These are numbered within each section and should be definite, clear recommendations as to what the proposing organization should do to correct a problem or strengthen the project. The basis for the Recommendations should be discussed under Findings and Comments. These are the items that the project (proposers) must respond to by the next review.

ACTION ITEMS

Those recommendations that are considered particularly important may be elevated to this level or these may be any item to which a response is desired within a definite time. The Action Items are discussed in the Committee Executive Sessions and agreed to by the Committee. Action Items are agreed to in writing by the Committee Chairperson, the DOE field office, and the proposing organization (as appropriate). The Action Items can be for the proposing organization or for DOE to respond to individually or jointly and they carry a date by which response is required.

THE FOLLOWING FORMAT IS USED FOR
HAND-WRITTEN OR TYPED INPUT FOR THE DRAFT REPORT

Your Name
Version Number/Date/Time

2.1 Section Title

2.1.1 Findings

Text or Bullets

2.1.2 Comments

Text or Bullets

2.1.3 Recommendations

1. Begin recommendation with an action verb and end with a suggested date of action.
- 2.
- 3.

APPENDIX H

ACTION ITEMS

Action Items

Resulting from the June 3-5, 1998 Department of Energy Review of the

Neutrinos at the Main Injector (NuMI) Project

<u>Action</u>	<u>Responsibility</u>	<u>Due Date</u>
1. Agree on definitions of the Technical Commissioning Goals in the Project Plan	DOE/Fermilab	July 1998
2. Conduct next review	DOE/Fermilab	November 1998

T. Fields
NuMI Project Manager
Fermilab

R. Lutha
DOE Project Manager
Fermi Group

S. Tkaczyk
DOE Review Chairman
Office of Science

J. Peoples
Director
Fermilab

R. Wunderlich
Acting Manager
Fermi Group

P. Debenham
NuMI Program Manager
Office of Science